science has barely overtaken art. But in the second class, science has not only overtaken art, but is the whole foundation, the entire creator of the art. Here art is the daughter of science. The great chemical manufactories which have sprung up at Liverpool, Newcastle, Glasgow, owe their existence entirely to a profound and scientific knowledge of chemistry. These arts never could have existed if there had not been a science of chemistry, and that an exact and philosophical science."

Climate of Italy in relation to Pulmonary Consumption; with Remarks on the Influence of Foreign Climates upon Invalids. By T. H. BURGESS, M.D. &c. Longman and Co. London. 1852.

LET the busy professional invalid who sighs for the soft winds and the interesting sights of Italy, read Dr. Burgess's book, and be consoled and comforted. There are Comos, Venices, Milans, Montpeliers, in Britain no less than on the continent. The object of the little work under notice is to dissect the climates of all the fashionable resorts in the south of France and in Italy to which invalids, including the consumptive, fly in the hope of attaining what they erroneously imagine these resorts to be far more able than their native climate to yield them—better health. These continental climates, Dr. Burgess admits, are in some respects milder and more eligible; but most of them he maintains are not *equable*, and hence are more likely to injure than to benefit, especially the consumptive, and he is of opinion that there are many localities in England preferable to any of them. Venice and the lake of Como appear in his estimation to be the least objectionable.

The system of sight-seeing in many respects he disapproves of in the case of phthisical patients. In speaking of Venice, for instance, he says,—

"I have repeatedly seen patients positively moribund, conveyed about this city, sight-seeing, under the impression that constant *change of scene* was as necessary for their cure as change of atmosphere. Change of scene may, and does, produce good effects in nervous and dyspeptic invalids, or upon those exhausted by over-exertion, shock, or mental anxiety; but what benefits it can accomplish in patients with organic disease, like tubercular consumption in an advanced stage, I am at a loss to conceive. The invalids alluded to, or their advisers, however, seemed to think otherwise; for, apparently, their sole object in view when visiting Venice, was to contemplate the works of Titian, the frescoes of Tintoretto and of Paolo Veronese, the statues, palaces, temples, the mausoleums of Sansovino and Palladio, whereas they seemed as if utterly unconscious of the injury they were thus doing to their health, or their frail tenure of life."

While advocating the cause of his native climate to the English invalid, the author, we may add, enters a protest against the site of the Consumption Hospital: "I cannot help thinking," he says, "that the site of the Hospital for Consumption at Brompton was injudiciously chosen. It is surely a mistake to place consumptive invalids in a damp, low-lying locality, ill drained, badly ventilated, for the problematical advantages of its 'mild climate.' An elevated situation, with a free circulation of air, if sheltered from the north-east, would not have the sedative and relaxing effect upon constitutions already too relaxed, which the climate of Brompton possesses."

OXFORD ARCHITECTURAL SOCIETY.—A meeting of this Society was held in the Society's Rooms, Holywell, on Wednesday, in last week, the Rev. the Principal of Brasenose College, President, in the chair, when the Secretary read the report of the committee, stating that the suggestions of the society had been adopted by the architects employed in the restoration of St. Mary's, Warwick, and that Mr. Freeman's report upon Fortworth Church had been accepted by the committee. The Rev. J. E. Millard, M.A., of Magdalen College, read the first part of a paper containing notes of a tour in Belgium, in 1848. The Secretary read a description of a monumental effigy of a pilgrim, in the parish church of Ashby-de-la-Zouch.

Miscellanea.

IRON STEAM-SHIP BUILDING AT LIVERPOOL.—An order has been received in this country for the construction of thirty iron steam vessels for the Danube Steam Navigation Company. They are to be of large dimensions, and of substantial materials. The order has been distributed so as to give employment in Liverpool, the Clyde, and Newcastle. Messrs. Thomas Vernon and Son, whose building-yard is on the west side of the Brunswick Dock, have received orders for the construction of ten of these new iron steamers, which are to be completed with the greatest possible despatch. They will be sent out in sections, for the purpose of being put together on reaching their destination abroad. They will be large flat-bottomed boats, 170 feet long, 25 feet beam, and 9 feet depth of water, and so constructed that they will be able, even with a very large cargo, to navigate in the shallow waters of the Danube. They are being built for conveying produce and general merchandise to the Black Sea from the interior of the country, and, where necessary, will be towed by steam-tugs, of which the company have a large fleet. The same firm have just completed an iron screw vessel, which is the pioneer of a new fleet, to be constructed for the purpose of carrying coal from Hartlepool to London. Should this, and the sister boat which Messrs. Vernon are building, succeed, several hundreds of the same class will be required. A range of docks is being constructed at Hartlepool for the accommodation of the proposed screw steamers, and other important arrangements are being made for carrying out the trade in a very extensive and spirited manner. They are first-class steamers, 160 feet long, 25 feet 6 inches beam, 80-horse power, and 500 tons burden. But, perhaps, the most important feature is, that, having double iron-bottoms, they can take in water when returning light from a voyage, thus avoiding the cost and delay of putting ballast on board, all that is required being to open the tap to the sea when ballast is wanted. Their having good inside bottoms will also contribute materially to their strength and safety. These boats are being constructed according to the designs, and under the direction, of Mr. John Grantham, consulting mechanical engineer. Another iron steam-ship, about the same size, is being built by Messrs. Vernon, for the Liverpool and Newry station, to carry passengers and general merchandise; and they are proceeding to build three screw-steamers, of novel construction, for the Mediterranean, and which, it is anticipated, will accomplish a very high rate of speed.—*Liverpool Albion.*

LONDONDERRY BRIDGE.—This will, perhaps, be one of the largest structures in the United Kingdom. The plan contemplates combining a railway and roadway in the same viaduct. We take the following from the report of the Lords of the Admiralty:—"The proposed new bridge, as explained by Mr. Charles May, consists principally of two large iron tubes, 280 feet long each, and resting upon four iron piers. These tubes are to contain a single line of railway, over which, at a height of twenty feet, the roadway is to pass; and between the iron tubes (which occupy the central part of the river) and the river bank, the railway and roadway are continued, supported by means of iron piers and pillars. The total length of the proposed bridge is to be 850 feet between its abutments, supported on eight iron piers, and with a clear waterway of 770 feet, viz., two spans of 256 feet each, four spans of 39 feet each, and one opening span of 30 feet."

THE LIVERPOOL ARCHITECTURAL SOCIETY.—At the sixteenth meeting of the session, on Wednesday, week before last, Mr. J. A. Picton in the chair, the first prize for students' designs was awarded to Mr. Price, and the second to Mr. Richardson. Several subjects were discussed, among them a paper by Mr. G. F. Chantrell, on "The application of Fire and other Clays to Building and Sanitary Purposes." The last meeting of the session was held on the 12th, when Manchester was fixed on for the next annual excursion.

OSCILLATION ON RAILWAYS.—The recent railway accident between Winchester and Basingstoke, causing the deaths of two men, besides other serious injuries, was owing to the breaking of one of the engine-wheel tyres. At the coroner's inquest it was stated, that the iron was sound, and of best quality, and that the accident could not be accounted for otherwise than as the effects of frost. Verdict, accidental deaths. The evidence is not even asked, if such fractures did not happen to wheels and axletrees in seasons of no frost, and whether the circumstances of wheels attached to a warm engine, with the friction in running so many miles, would not temper away the frosty influence; or whether there might not be mechanical causes, such as the rubbing and friction with severe shocks and jars from lateral oscillation of the carriages upon the rails? But what justice or remedy of causes can be expected, when such a mere baffling feint ends the investigation? One thing is certain; that if the tyres were much lighter, they would not stand the racket of such heavy lateral action, and therefore it may be questionable whether they are yet strong enough for such an inimical working system. Machinists, who monopolise this subject, seem to be as cold and indifferent about consequences and perfection as Jack-frost himself, and are always very guarded lest they should criminate this unqualified working system. Therefore, if railway commissioners and directors are equally regardless, killing and crippling will go on with impunity; but if they will institute rigid investigation, with conviction that to every mechanical evil there ought to be found a mechanical remedy, such inquiries would greatly stimulate ingenuity to the correction of lateral unsteadiness, when we should witness the perfection of railway travelling in the mechanical guarantee of safety, speed, and economy.—G. M.

SANITARY REFORM IN THE METROPOLIS.—SIR: I was much pleased with your remarks on sanitary reform, in a late number of THE BUILDER; but in addition to the pernicious effects there glanced at, I think that that almost national disease, consumption, is intimately affected by the state of the air breathed. To a superficial thinker the bad state of London air may not be apparent. It may not in some cases be evident to the sense of smell. He may not note any *immediate* decrease in the vigorous action of the respiratory organs. But let him ascend to the "house top," and look around on the interminable congregation of streets and houses: he will *then* distinctly see the thick murky atmosphere in which they are constantly bathed. Let him but look "with microscopic eye" on that air loaded with confervoid growth—actual decomposing organic matter, and other impurities derived from a thousand different sources: let him trace it as it enters the lungs of the inhabitants, diffusing itself through the interstices of our most delicate and vital organs: need he ask himself then, "Does this not injure the lungs?" Again, this contaminated air is further converted by the metropolitans into (if I may so express myself) *a high pressure* poisonous medium, by closing every outlet to their habitations, by which the noxious atmosphere might escape. Anxiously do I look forward to the day when the laws of health will be better understood and acted on.—OLIVER.

STEAM POWER FOR FARM PURPOSES.—The *Inverness Advertiser* publishes an abstract of a paper by Mr. R. Ritchie, to whom the Highland Society awarded their gold medal in 1850. As essential requisites in the prime movers of barn machinery, Mr. Ritchie insists, 1st, upon stability and durability without loss of power and increase of friction; 2nd, simplicity of management; 3rd, non-liability to derangement of the parts; 4th, safety, as freedom from all danger of steam explosion; and 5th, thorough economy of fuel and no danger from fire. In speaking of portable engines, Mr. Ritchie says, he is at a loss to comprehend what object can be obtained by locomotion to a farmer of ordinarily prudent habits of management in the present state of husbandry: for small farms, however, he admits their utility.

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